

What is claimed is:

CLAIMS

1. In a system that develops null angle measurements in response to a detection of radiation, a method of determining a location of a radiation source, comprising the steps of:

obtaining position information related to the null angle measurements;

determining at least one baseline distance associated with the null angle measurements; and

computing the location of the radiation source using at least one baseline distance, along with associated null angles and related position information.

2. The method of claim 1 wherein the step of obtaining position information related to the null angle measurements comprises the step of:

obtaining position information related to the null angle measurements made by a same moving object.

3. The method of claim 1 wherein the step of obtaining position information related to the null angle measurements comprises the step of:

obtaining position information related to the null angle measurements made by a plurality of objects.

4. The method of claim 3 wherein the step of obtaining position information comprises the step of:

obtaining position information related to the null angle measurements made by the plurality of objects, at least one of which is a moving object.

5. The method of claim 1 wherein the step of obtaining position information related to the null angle measurements comprises the step of:

obtaining position information relating the null angle measurement to a predetermined location.

6. The method of claim 1 wherein the step of obtaining position information related to the null angle measurements comprises the step of:

obtaining position information relating the null angle measurement to a geo-reference coordinate.

7. The method of claim 1 wherein the step of computing the location of the radiation source comprises the step of:

employing the baseline distance, the related position information, and the associated null angle measurements to determine the radiation source location through reverse triangulation.

8. The method of claim 7 wherein the step of computing the location of the radiation source comprises the step of:

employing a plurality of baseline distances along with the related position information and associated null angle measurements to compute a plurality of location values for the radiation source location; and

computing a best fit location value based upon the plurality of location values computed for the radiation source location.

9. The method of claim 8 wherein the step of computing a best-fit location value comprises the step of:

Kalman filtering the location values.

10. The method of claim 1 further comprising the step of:

transmitting at least one object location and the null angle information to a controller to enable the controller to compute the location of the radiation source.

11. The method of claim 1 further comprising the step of:

obtaining position and null angle information for at least one object; and

transmitting the position and null angle information to another object that is obtaining position and null angle information to thereby enable the object to which the position and null angle information is transmitted to compute the location of the radiation source.

12. The method of claim 1 further comprising the step of:

transmitting the location of the radiation source to a receiving controller.

13. A method comprising the steps of:
developing null angle measurements in response to a detection of radiation;
obtaining position information related to the null angle measurements;
determining at least one baseline distance associated with the null angle measurements;
computing a location of a radiation source using at least one baseline distance, along with associated null angles and related position information; and
transmitting the location of the radiation source to a receiving controller.

14. The method of claim 13 wherein the step of developing the null angle measurements comprises the step of:
employing a digital spatial nuller to develop the null angle measurements.

15. The method of claim 14 wherein the step of employing a digital spatial nuller comprises the step of:
employing STAP in conjunction with a radar system to develop the null angle measurements.

16. The method of claim 14 wherein the step of employing a digital spatial nuller comprises the step of:
employing STAP in conjunction with a global positioning system (GPS) system.

17. In a system that develops null angle measurements in response to a detection of radiation, an apparatus for determining a location of a radiation source, comprising a controller configured to:

obtain position information related to the null angle measurements;

determine at least one baseline distance associated with the null angle measurements; and

use at least one baseline distance, along with associated null angles and related position information, to compute the location of the radiation source.

18. The apparatus of claim 17 wherein the controller is configured to obtain position information related to the null angle measurements made by a same moving object.

19. The apparatus of claim 17 wherein the controller is configured to obtain position information related to the null angle measurements made by a plurality of objects.

20. The apparatus of claim 19 wherein the controller is configured to obtain position information related to the null angle measurements made by the plurality of objects, at least one of which is a moving object.

21. The apparatus of claim 17 wherein the controller is configured to obtain position information relating the null angle measurements to a predetermined location.

22. The apparatus of claim 17 wherein the controller is configured to obtain position information relating the null angle measurements to a geo-reference coordinate.

23. The apparatus of claim 17 wherein the controller is configured to employ the baseline distance, related position information, and associated null angle measurements to determine the radiation source location through reverse triangulation.

24. The apparatus of claim 23 wherein the controller is configured to employ a plurality of baseline distances along with associated position information and null angle measurements to compute a plurality of values for the radiation source location and to compute a best fit location value based upon the plurality of location values.

25. The apparatus of claim 24 wherein the controller is configured to Kalman filter the location values.

26. The apparatus of claim 17 further comprising:
a transmitter within one object said transmitter configured to transmit location and null angle information to the controller to enable the controller to compute the radiation source location.

27. The apparatus of claim 17 further comprising:
at least one object that is obtaining position and null angle information and transmitting the location and null angle information to another object that is obtaining position and null angle information to thereby enable the object to which the position and null angle information is transmitted to compute the radiation source location.

28. The apparatus of claim 17 wherein the controller is configured to transmit the location of the radiation source to a receiving controller.

29. An apparatus comprising a controller configured to develop null angle measurements in response to a detection of radiation; to obtain position information related to the null angle measurements; to determine at least one baseline distance associated with the null angle measurements; to use at least one baseline distance, along with associated null angles and related position information, to compute a location of a radiation source; and to transmit the radiation source location information to a receiving controller.

30. The apparatus of claim 29 wherein the controller is configured to employ a digital spatial nuller to develop the null angle measurements.

31. The apparatus of claim 30 wherein the controller is configured to employ STAP in conjunction with a radar system to develop the null angle measurements.

32. The apparatus of claim 30 wherein the controller is configured to employ STAP in conjunction with a global positioning system (GPS) system.